REFERENCES 77

[45] A. Hilbig, D. Lehmann, and M. Pradel, "An Empirical Study of Real-world WebAssembly Binaries: Security, Languages, Use Cases," in WWW '21: The Web Conference 2021, Virtual Event / Ljubljana, Slovenia, April 19-23, 2021, pp. 2696–2708, 2021.

- [46] Y. Yan, T. Tu, L. Zhao, Y. Zhou, and W. Wang, "Understanding the Performance of Webassembly Applications," in *Proceedings of the 21st ACM Internet Measurement Conference*, IMC '21, p. 533–549, 2021.
- [47] L. Wagner, M. Mayer, A. Marino, A. S. Nezhad, H. Zwaan, and I. Malavolta, "On the Energy Consumption and Performance of WebAssembly Binaries across Programming Languages and Runtimes in IoT," in *Proceedings of the 27th International Conference on Evaluation and Assessment in Software Engineering, EASE 2023, Oulu, Finland, June 14-16, 2023*, pp. 72–82, ACM, 2023.
- [48] B. L. Titzer, "Whose baseline compiler is it anyway?," arXiv e-prints, p. arXiv:2305.13241, May 2023.
- [49] N. Mäkitalo, T. Mikkonen, C. Pautasso, V. Bankowski, P. Daubaris, R. Mikkola, and O. Beletski, "WebAssembly Modules as Lightweight Containers for Liquid IoT Applications," in *Proceedings of Web Engineering 21st International Conference, ICWE*, vol. 12706, pp. 328–336, 2021.
- [50] P. K. Gadepalli, S. McBride, G. Peach, L. Cherkasova, and G. Parmer, "Sledge: a Serverless-first, Light-weight Wasm Runtime for the Edge," in Middleware '20: 21st International Middleware Conference, pp. 265–279, 2020.
- [51] N. Burow, S. A. Carr, J. Nash, P. Larsen, M. Franz, S. Brunthaler, and M. Payer, "Control-flow integrity: Precision, security, and performance," ACM Comput. Surv., vol. 50, apr 2017.
- [52] I. Bastys, M. Algehed, A. Sjösten, and A. Sabelfeld, "SecWasm: Information Flow Control for WebAssembly," in Static Analysis - 29th International Symposium, SAS, vol. 13790 of Lecture Notes in Computer Science, pp. 74– 103, Springer, 2022.
- [53] T. Brito, P. Lopes, N. Santos, and J. F. Santos, "Wasmati: An efficient static vulnerability scanner for WebAssembly," *Comput. Secur.*, vol. 118, p. 102745, 2022.
- [54] F. Marques, J. Fragoso Santos, N. Santos, and P. Adão, "Concolic execution for webassembly (artifact)," Schloss Dagstuhl-Leibniz-Zentrum für Informatik, 2022.

78 REFERENCES

[55] C. Watt, J. Renner, N. Popescu, S. Cauligi, and D. Stefan, "CT-wasm: Type-driven Secure Cryptography for the Web Ecosystem," Proc. ACM Program. Lang., vol. 3, no. POPL, pp. 77:1–77:29, 2019.

- [56] R. Tsoupidi, M. Balliu, and B. Baudry, "Vivienne: Relational Verification of Cryptographic Implementations in WebAssembly," in *IEEE Secure Development Conference*, SecDev 2021, Atlanta, GA, USA, October 18-20, 2021, pp. 94-102, IEEE, 2021.
- [57] Q. Stiévenart and C. De Roover, "Wassail: A Webassembly Static Analysis Library," in Fifth International Workshop on Programming Technology for the Future Web, 2021.
- [58] F. Breitfelder, T. Roth, L. Baumgärtner, and M. Mezini, "WasmA: A Static WebAssembly Analysis Framework for Everyone," in *IEEE International Conference on Software Analysis, Evolution and Reengineering, SANER*, pp. 753–757, 2023.
- [59] S. Cao, N. He, Y. Guo, and H. Wang, "WASMixer: Binary Obfuscation for WebAssembly," CoRR, vol. abs/2308.03123, 2023.
- [60] W. Fu, R. Lin, and D. Inge, "TaintAssembly: Taint-based Information Flow Control Tracking for WebAssembly," CoRR, vol. abs/1802.01050, 2018.
- [61] Q. Stiévenart, D. Binkley, and C. De Roover, "Dynamic Slicing of WebAssembly Binaries," in 39th IEEE International Conference on Software Maintenance and Evolution, IEEE, 2023.
- [62] Q. Stiévenart, D. W. Binkley, and C. D. Roover, "Static Stack-preserving Intra-procedural Slicing of WebAssembly Binaries," in 44th IEEE/ACM 44th International Conference on Software Engineering, ICSE 2022, Pittsburgh, PA, USA, May 25-27, 2022, pp. 2031–2042, ACM, 2022.
- [63] D. Lehmann and M. Pradel, "Wasabi: A Framework for Dynamically Analyzing WebAssembly," in *Proceedings of the Twenty-Fourth International Conference on Architectural Support for Programming Languages and Operating Systems, ASPLOS*, pp. 1045–1058, 2019.
- [64] S. Narayan, C. Disselkoen, D. Moghimi, S. Cauligi, E. Johnson, Z. Gang, A. Vahldiek-Oberwagner, R. Sahita, H. Shacham, D. M. Tullsen, and D. Stefan, "Swivel: Hardening WebAssembly against Spectre," in 30th USENIX Security Symposium, USENIX, pp. 1433–1450, 2021.
- [65] M. Kolosick, S. Narayan, E. Johnson, C. Watt, M. LeMay, D. Garg, R. Jhala, and D. Stefan, "Isolation Without Taxation: Near-Zero-cost Transitions for WebAssembly And SFI," Proc. ACM Program. Lang., vol. 6, no. POPL, pp. 1–30, 2022.